

# Local Climatological Data

Annual Summary With Comparative Data

1980

WASHINGTON, D.C.  
DULLES INTERNATIONAL AIRPORT



## Narrative Climatological Summary

Dulles International Airport is located in the Virginia Piedmont about 23 miles east of the Blue Ridge Mountains and 12 miles east of the Bull Run and Catoctin Mountains. The Blue Ridge rises to about 2500 feet above MSL and the Bull Run Mountains to about 1500 feet at their nearest points. About one and one half miles to the east, the general downward slope of the terrain is interrupted by a poorly defined band of low hills that rise to about 150 feet above the airport. Field elevation is 313 feet. The terrain near the airport is mostly low rolling hills about one-fourth wooded. Several artificial ponds located on and near the airport and poor air drainage contribute to the formation of local ground fog. With easterly winds there is an upslope effect from the Atlantic Ocean, 140 miles east, and from the Chesapeake Bay, about 55 miles east. Westerly winds create a slight foehn effect.

Location in the middle latitudes, where the general atmospheric flow is from west to east, favors a continental type of climate with its four well defined seasons. Summers are warm and at times humid, and winters mild; generally pleasant weather prevails in spring and autumn. The coldest period, when minimum temperatures average 23°F, occurs in mid-January; the warmest, with a mean maximum of 87°F, comes the last half of July.

Precipitation is rather evenly distributed through the year. The greatest annual total of precipitation was 59.02 inches in 1972; the least 28.86 inches in 1965. The highest rainfall in a 24-hour period was 11.88 inches, recorded during Tropical Storm Agnes in June 1972. The seasonal snowfall averages near 24 inches but varies greatly from season to season,

ranging from 44.6 inches in the 1963-64 season to 2.2 inches in the 1972-73 season. The median number of snowfalls of 4 inches or more is two per season. Snowfalls of 10 inches or more have occurred six times in the 13 seasons since the 1962-63 season. The greatest total from any one storm is 15.4 inches, December 31, 1970 -January 1, 1971.

Storm damage results mainly from heavy snows and freezing rains in winter and from hurricanes and severe thunderstorms during the other seasons. Damage may be from wind, flooding or precipitation alone or in any combination. The most noteworthy storms in the area during this station's operation were Tropical Storm Agnes, June 20-23, 1972, the tornado of April 1, 1973, and the snowstorms of January 29-30, 1966, and December 31, 1970 -January 1, 1971.

Prevailing winds are from the south except during the winter months when they are from the northwest. The windiest period is late winter and early spring. Winds are generally less during the night and early morning hours and increase to a maximum in the afternoon. Winds may reach 50 to 60 miles per hour or even higher during severe summer thunderstorms, hurricanes, and winter storms.

Records for 1963-1975 indicate that the average date of the last 32-degree freeze in the spring is April 27th and the latest is May 11th. The average for the first in autumn is October 13th and the earliest is September 24th. The growing season, often defined as the number of days between the last 32-degree freeze in spring and the first in autumn, averages 169 days.

Aviation weather statistics, in percentage frequency, based on records from July 1962 through December 1971 are as follows:

Ceiling:	Visibility:	Jan.	Apr.	July	Oct.	Year
Above 3,000 feet and 1,000 to 3,000 feet and/or	Above 5 miles	78	80	78	80	89
500 to less than 1,000 feet and/or	3 to 5 miles	7	7	13	9	9
Less than 500 feet and/or	1 to less than 3 miles	6	8	6	5	6
	Less than 1 mile	9	5	3	5	5

# Meteorological Data For The Current Year

Station: WASHINGTON, D.C.  
# 93738

DULLES INTERNATIONAL AIRPORT Standard time used:

EASTERN

Latitude: 38° 57' N

Longitude: 77° 27' W

Elevation (ground): 290 feet

Year: 1980

Month	Temperature °F						Degree days Base 65 °F	Precipitation in inches				Relative humidity, pct.				Wind				Percent of possible sunshine	Number of days						Average station pressure mb											
	Averages			Extremes				Water equivalent		Snow, ice pellets		Resultant		Fastest mile		Sunrise to sunset		Precipitation		Temperature °F																		
	Daily maximum	Daily minimum	Monthly	Highest Date	Lowest Date	Heating Cooling		Total	Greatest in 24 hrs.	Date	Total	Greatest in 24 hrs.	Date	Direction	Speed m.p.h.	Average speed m.p.h.	Direction	Speed m.p.h.	Average sky cover, tenths, sunrise to sunset	Cloudy	Partly cloudy	Clear	Maximum	Minimum														
JAN	40.7	29.6	32.7	57	16	13	24	993	0	2.95	1.18	18	9.9	7.2	4-5	77	78	61	71	32	4.0	7.7	24	3.0	23	7.9	3	22	10	1	29	0	1007.5					
FEB	41.5	29.5	31.0	62	21	3	29	977	0	1.00	0.32	22	5.6	2.9	28	72	76	52	58	31	5.4	6.8	29	3.1	2	5.3	12	7	10	9	2	25	0	1006.8				
MAR	52.9	30.9	41.9	73	8	6	4	707	0	4.82	1.10	20-21	9.8	6.4	1-2	75	77	54	61	29	3.3	10.0	37	3.0	22	7.2	5	7	19	4	1	17	0	1005.1				
APR	67.9	43.3	55.6	81	20	30	17	272	0	3.68	0.86	26-27	0.0	0.0	0	75	77	49	56	31	1.1	6.2	26	2.9	16	6.3	9	8	13	13	1	2	0	1002.0				
MAY	78.9	52.6	65.8	90	13	34	10	69	100	3.86	0.90	20-21	0.0	0.0	0	79	80	51	60	28	1.6	6.7	40	2.8	19	6.4	9	8	15	0	1	1	0	1002.0				
JUN	83.2	55.2	69.2	96	27	43	13	31	165	1.89	0.75	15-16	0.0	0.0	0	83	78	48	58	26	2.4	6.9	46	2.7	15	5.3	12	8	10	11	0	5	0	1003.7				
JUL	90.1	64.5	77.3	101	20	50	1	0	391	4.41	1.63	8	0.0	0.0	0	65	82	52	66	20	2.1	6.0	48	3.0	5	4.2	17	9	5	10	0	1	17	0	1003.4			
AUG	90.1	64.0	77.1	100	1	51	17	0	380	1.67	0.69	15	0.0	0.0	0	83	81	49	64	26	1.1	4.4	40	2.7	1	5.9	8	10	13	0	2	21	0	1005.4				
SEP	84.5	57.0	70.8	99	2	39	28	33	211	2.70	1.23	24-25	0.0	0.0	0	82	83	46	63	26	0.6	4.9	23	2.9	26	5.9	6	13	11	0	3	5	11	0	1007.1			
OCT	67.6	40.5	54.1	84	9	25	31	342	12	2.77	2.22	25	0.0	0.0	0	81	84	46	64	29	2.2	6.8	31	2.6	25	5.7	9	12	10	6	1	3	0	1005.4				
NOV	54.0	31.3	42.7	73	8	18	20	664	0	3.42	1.38	24	T	T	27	72	78	51	62	2.9	3.9	8.7	26	3.0	25	6.0	8	10	12	0	1	3	0	1007.5				
DEC	44.9	24.8	34.9	76	8	2	26	928	0	0.68	0.24	24	0.4	0.4	31	71	73	54	64	3.1	3.4	8.0	35	3.0	3	6.6	7	7	17	6	0	6	23	0	1009.8			
YEAR	66.4	42.4	54.4	101	20	2	26	5016	1259	33.81	2.22	25	25.7	7.2	4-5	78	79	51	62	29	2.3	7.3	48	3.0	5	6.1	105	105	156	124	9	37	19	55	19	120	0	1005.5

† DATA CORRECTED AFTER PUBLICATION OF THE MONTHLY ISSUE.

## Normals, Means, And Extremes

Month	Temperatures °F						Normal Degree days Base 65 °F	Precipitation in inches				Relative humidity pct.				Wind				Percent of possible sunshine	Mean number of days						Average station pressure mb														
	Normal			Extremes				Water equivalent		Snow, ice pellets		Resultant		Fastest mile		Sunrise to sunset		Precipitation		Mean sky cover, tenths, sunrise to sunset		Cloudy		Partly cloudy		Clear															
	Daily maximum	Daily minimum	Monthly	Record highest	Year	Record lowest		Normal	Maximum monthly	Year	Minimum monthly	Year	Maximum monthly	Year	Minimum monthly	Year	Hour 01	Hour 07	Hour 13	Hour 19	17	18	18	18	18	18															
(a)	41.2	23.0	32.1	75	1975	-8	1970	1020	0	2.84	6.61	1979	1.10	1977	2.13	1976	19.0	1966	15.4	1971	75	78	60	68	8.4	3.9	20	1978	6.5	8	7	16	10	2	4	1	29	0	1006.7		
J	53.4	24.1	33.8	75	1976	-14	1979	874	0	2.61	5.75	1979	0.25	1978	1.66	1972	27.6	1979	16.3	1979	73	76	53	61	9.0	36	28	1972	6.2	9	6	13	9	2	4	1	26	1	1006.5		
F	52.7	30.9	41.8	84	1979	6	1980	719	0	3.48	6.82	1980	1.24	1966	2.56	1967	10.4	1969	7.2	1969	73	77	52	58	9.3	40	29	1977	6.7	7	8	16	10	1	1	1	17	0	1005.3		
A	65.0	41.1	53.1	90	1976	17	1969	357	0	2.96	7.35	1973	0.93	1967	2.18	1970	1.0	1973	1.0	1973	72	75	47	52	9.0	46	32	1963	6.3	8	9	13	10	1	2	2	6	0	1004.1		
M	74.5	50.6	62.6	97	1969	28	1970	131	57	3.68	6.47	1971	0.80	1964	2.08	1968	1	1963	0	1963	84	83	56	65	7.6	40	28	1980	6.4	7	10	14	12	0	4	2	1	0	1003.2		
J	82.7	59.4	71.1	100	1964	36	1977	5	188	3.61	18.19	1972	0.94	1966	11.88	1972	0.0	1966	0.0	1966	88	85	57	67	6.8	46	27	1980	6.1	7	11	12	10	0	6	2	5	0	1004.5		
J	86.6	64.1	75.3	103	1966	4	1979	0	319	4.12	6.25	1975	2.36	1968	0.0	0.0	0.0	0.0	0.0	0.0	89	86	56	68	6.2	48	30	1980	6.1	8	11	12	10	0	6	3	9	0	0	0	1004.6
A	85.0	62.1	73.6	100	1980	43	1976	0	267	4.25	9.28	1967	1.67	1980	3.89	1967	0.0	0.0	0.0	0.0	90	89	56	73	5.9	40	27	1980	5.9	8	11	12	10	0	6	3	8	0	0	0	1006.4
S	78.7	55.0	66.9	99	1980	30	1974	43	100	3.29	11.26	1975	0.62	1967	5.54	1966	0.0	0.0	0.0	0.0	89	90	57	76	6.2	35	25	1967	5.8	9	9	12	8	0	2	4	3	0	0	0	1006.6
O	68.2	43.5	55.9	90	1967	15	1969	291	9	2.74	9.19	1971	T	1963	4.13	1979	1.3	1979	1.3	1979	87	89	55	73	6.7	38	29	1967	5.4	12	7	12	8	*	1	4	*	0	5	0	1007.1
N	55.6	33.7	44.7	84	1971	11	1976	609	0	3.06	7.83	1963	D.46	1965	3.33	1963	11.4	1967	11.4	1967	79	83	56	69	7.7	35	29	1969	6.3	8	8	14	9	*	1	2	0	*	15	0	1007.6
O	43.3	24.7	34.0	76	1980	0	1967	961	0	3.47	6.74	1965	3.15	1977	24.2	1966	12.1	1969	76	79	58	69	8.0	40	30	1968	6.6	8	6	17	10	1	*	3	0	3	24	*	1007.1		
YR	64.7	42.7	53.7	103	1966	-14	1979	5010	940	40.11	18.19	1972	T	1963	11.88	1972	27.6	1979	16.3	1979	81	83	55	66	7.6	48	30	1980	6.2	99	103	163	116	6	28	33	26	15	117	2	1005.8

(a) Length of record, years, through the current year unless otherwise noted, based on January data.

## Average Temperature

Year	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Annual
1963	28.4	29.3	46.1	53.4	60.1	70.3	76.0	74.3	65.4	59.3	48.6	29.4	53.4
1964	33.4	30.9	43.1	50.6	64.6	73.3	76.3	72.2	66.7	51.9	47.5	38.9	54.1
1965	30.7	35.3	39.2	51.3	66.9	70.1	74.9	75.0	70.4	54.0	45.2	39.4	54.9
1966	28.4	31.7	43.3	46.6	60.8	71.5	76.5	74.0	63.6	51.8	44.9	33.0	52.3
1967	36.6	29.1	42.8	54.8	55.9	71.4	74.5	72.8	63.6	53.7	40.9	36.5	52.7
1968	28.2	30.8	46.2	53.1	58.6	70.0	75.6	75.6	66.8	56.4	46.1	31.9	53.3
1969	29.4	32.2	38.7	55.3	64.3	73.6	77.8	71.9	65.3	52.8	41.9	31.0	52.9
1970	23.9	32.7	37.8	52.5	63.5	68.9	74.0	72.2	69.1	56.3	45.7	36.3	52.8
1971	28.5	36.7	39.7	51.4	60.1	72.6	79.9	72.9	69.7	61.4	44.6	42.2	54.5
1972	35.8	32.6	42.8	51.3	61.8	67.4	75.9	73.3	68.0	51.5	42.0	39.3	53.5
1973	33.6	33.1	48.6	53.1	59.8	74.2	76.4	69.6	56.9	46.0	35.2	55.2	
1974	37.8	32.5	44.6	54.3	61.1	67.1	73.5	74.4	66.3	53.3	46.1	36.6	54.0
1975	34.0	35.0	40.3	49.1	65.2	70.9	74.6	75.5	69.4	57.0	47.2	33.2	53.9
1976	27.5	41.1	44.6	52.9	58.1	70.5	72.2	71.5	64.8	50.5	38.3	31.2	51.9
1977	21.0	34.8	48.9	55.4	64.5	68.3	76.4	76.3	69.9	53.9	47.9	33.0	54.2
1978	27.3	26.7	40.6	54.2	63.4	71.6	74.4	77.2	68.9	53.8	46.8	38.2	53.6
1979	31.2	23.3	46.4	52.2	63.3	68.2	74.2	74.4	66.9	54.6	49.7	40.1	53.7
1980	32.7	31.0	41.9	55.6	65.8	69.2	77.3	77.1	70.8	54.1	42.7	34.9	54.4
RECORD													
MEAN	30.5	32.1	43.1	52.7	62.1	70.5	75.3	74.3	67.2	54.6	45.1	35.6	53.6
MAX	39.8	42.4	54.3	65.2	74.2	82.3	86.6	85.6	78.6	67.2	56.2	45.2	64.8
MIN	21.1	21.8	31.9	40.2	50.0	58.7	64.0	62.9	55.6	42.0	33.9	25.9	42.3

## Precipitation

Year	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Annual
1963	4.34	1.17	1.52	8.59	1.25	4.70	3.30	T	7.83	2.26			
1964	5.56	4.50	2.82	3.68	0.80	1.36	3.09	2.49	3.72	1.96	1.80	4.19	35.97
1965	3.24	2.58	4.27	2.53	1.77	1.75	3.94	3.75	2.28	0.46	0.42	28.86	
1966	4.22	3.90	1.24	4.38	3.84	0.94	2.17	1.79	9.39	3.01	1.50	3.67	40.05
1967	1.12	2.18	4.74	0.93	4.37	1.68	3.38	9.28	0.62	2.79	2.63	5.69	39.39
1968	2.31	0.68	3.36	1.25	5.90	5.20	4.08	4.96	2.10	2.77	3.57	2.32	38.48
1969	2.07	1.69	2.04	1.34	0.99	5.55	4.90	5.07	4.89	0.85	2.11	6.74	38.24
1970	1.32	2.76	2.98	4.19	2.86	2.48	6.00	2.65	1.03	2.79	6.00	3.88	38.94
1971	2.27	4.68	2.27	2.56	8.47	2.81	2.15	4.45	3.63	9.19	3.13	1.00	46.61
1972	2.28	5.44	2.37	4.40	4.76	18.19	1.53	2.09	1.40	3.49	7.09	6.06	59.05
1973	2.25	2.84	2.66	7.35	3.97	1.91	4.99	3.18	3.14	2.67	0.81	5.72	41.49
1974	3.07	1.14	3.09	2.14	3.78	5.41	2.69	4.84	4.02	0.71	1.97	5.26	38.12
1975	2.76	1.97	4.38	2.58	2.99	7.08	6.25	5.38	11.26	2.34	1.64	4.01	52.64
1976	2.81	1.42	4.15	1.31	4.18	2.88	2.33	3.13	3.75	7.88	0.57	1.78	36.19
1977	1.10	0.49	4.19	2.58	2.33	3.09	3.25	4.18	1.74	4.19	4.51	4.87	35.92
1978	6.55	0.25	2.85	1.62	5.05	4.36	4.52	4.29	0.78	0.79	3.02	3.58	37.66
1979	6.61	5.75	3.50	2.05	4.89	4.64	2.18	6.05	7.58	8.65	2.65	0.88	55.43
1980	2.95	1.00	4.82	3.64	3.86	1.89	4.41	1.67	2.70	2.77	3.42	0.68	33.81
RECORD													
MEAN	3.09	2.55	3.30	2.76	3.69	4.43	3.51	4.11	3.74	3.26	3.04	3.50	40.98

## Heating Degree Days

WASHINGTON, DC DULLES INTERNATIONAL AIRPORT													
Season	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	Total
1962-63													
1963-64	0	0	76	177	485	1099	1127	972	672	430	95	11	4998
1964-65	0	0	55	397	517	800	1057	824	793	406	41	44	4943
1965-66	0	6	35	337	588	785	1128	926	669	491	179	16	5169
1966-67	1	0	105	404	599	981	1002	682	317	283	12	5260	
1967-68	0	0	98	352	724	876	1136	985	572	350	205	13	5309
1968-69	0	12	16	279	561	1020	1098	913	809	293	91	1	5092
1969-70	0	8	90	376	685	1047	1267	898	837	378	121	17	5724
1970-71	0	0	46	272	573	879	1121	786	776	401	168	5	5027
1971-72	2	0	34	141	631	909	901	935	687	404	117	46	4597
1972-73	2	3	38	64	686	788	964	886	500	371	186	14	4839
1973-74	0	0	24	257	564	917	837	905	631	329	168	21	4653
1974-75	0	0	77	359	574	873	956	837	759	473	75	15	4997
1975-76	0	0	63	247	526	977	1156	688	625	382	232	35	4953
1976-77	0	6	65	447	753	1036	1361	838	508	303	90	41	5492
1977-78	1	2	23	339	521	985	1163	1066	748	317	123	14	5302
1978-79	0	0	58	349	539	824	1040	1163	578	383	115	43	5092
1979-80	7	15	50	337	461	765	993	977	707	272	65	31	4684
1980-81	0	0	33	342	664	928							

## Cooling Degree Days

Year	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
1970	0	0	0	10	83	143	288	228	178	9	0	0	939
1971	0	0	0	0	21	237	316	255	181	36	19	0	1054
1972	0	0	0	3	25	123	346	268	134	4	0	0	909
1973	0	0	0	20	30	281	344	355	168	15	0	0	1216
1974	0	0	0	4	15	59	270	299	127	3	11	0	872
1975	0	0	0	4	89	197	298	330	73	10	0	0	1001
1976	0	0	0	28	24	208	232	215	65	7	0	0	779
1977	0	0	0	13	22	81	147	361	357	175	3	12	1171
1978	0	0	0	0	0	84	219	298	285	185	10	0	1179
1979	0	0	0	6	5	69	147	297	310	112	21	6	976
1980	0	0	0	0	0	100	165	391	380	211	17	0	1259

## Snowfall

Season	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	Total
1962-63	0.0	0.0	0.0	0.0	T	9.2	1.7	3.6	1.0	0.0	T	0.0	44.6
1963-64	0.0	0.0	0.0	0.0	0.2	1.0	10.1	2.1	2.9	1	0.0	0.0	16.3
1964-65	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	44.4
1965-66	0.0	0.0	0.0	0.0									

# STATION LOCATION

WASHINGTON, D. C.  
DULLES INTERNATIONAL AIRPORT

Location	Occupied from	Occupied to	Ailine distance and direction from previous location	Latitude North	Longitude West	Ground at tem- perature site	Elevation above						Automatic Observing Equipment *	Remarks		
							Ground									
							Sea level	Wind instruments	Extreme thermometers	Psychrometer	Sunshine Switch	Tipping bucket rain gage	Weighing rain gage	8" rain gage	Hygrothermometer	
Telephone Building Dulles International AP (22 mi. W city center)	11/17/62	Present	NA	38° 57'	77° 27'	290	d20	NA b37	5 b36	NA	NA	NA	a34	c5	NA	a - Installed 3/1/63. b - Effective 10/10/74. c - Minor move 12/3/74. d - Minor move 2/19/75.

Subscription Price: \$3.30 per year for monthly data and annual summary. Foreign mailing \$1.95 extra. Single copy: 25 cents for monthly and 30 cents for annual issue. There is a minimum charge of \$3.00 for each order of shelf-stocked issues of publications. Make checks payable to Department of Commerce, NOAA. Send payments, orders, and inquiries to Publications, National Climatic Center, Federal Building, Asheville, N. C. 28801.

I certify that this is an official publication of the National Oceanic and Atmospheric Administration, and is compiled from records on file at the National Climatic Center, Asheville, North Carolina 28801.

*Daniel P. Mitchell*  
Director, National Climatic Center

USCOMM-NOAA-ASHEVILLE - 1300

U.S. DEPARTMENT OF COMMERCE  
NATIONAL CLIMATIC CENTER  
FEDERAL BUILDING  
ASHEVILLE, N.C. 28801

AN EQUAL OPPORTUNITY EMPLOYER

POSTAGE AND FEES PAID  
U.S. DEPARTMENT OF COMMERCE

210



FIRST CLASS